



## **Request for Proposal Clarification**

**Gila County Bid No. 103111-2**

**S.O. Tower Installation & Radio Equipment Relocation Project**

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**April 20, 2012**

**After extensive review of all proposals for Bid No. 103111-2 Gila County has chosen to submit to all bidders a Request for Proposal Clarification and enter into Concurrent Negotiations per page 6 of the bid documents which reads as follows:**

*Gila County shall establish procedures and schedules for conducting Negotiations. Disclosure of one (1) contractor's price or any information derived from competing bid prices or any information derived from competing bids is prohibited.*

- (a) Any response to a request for clarification of a bid shall be in writing.*
- (b) The County shall keep a record of all negotiations.*

*For the purpose of conducting negotiations with contractors, the County may use any of the following methods that, in their judgment, best meets the unique requirements.*

- (a) Concurrent Negotiations: Negotiations may be conducted concurrently with responsible contractors for the purpose of determining source selection and/or contract award.*
- (b) Exclusive Negotiations: A determination may be made by the County to enter into exclusive negotiations with the responsible contractor whose bid is determined in the selection process to be the most advantageous to Gila County.*

*Exclusive negotiations may be conducted subsequent to concurrent negotiations or may be conducted without requiring previous concurrent negotiations.*

- (a) A determination to conduct exclusive negotiations shall not constitute a contract award nor shall it confer any property rights to the successful bidder.*
- (b) If exclusive negotiations are conducted and an agreement is not reached, the County may enter into exclusive negotiations with the next highest ranked contractor without the need to repeat the formal solicitation process.*

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**Please provide the information requested below for proposal evaluation purposes. The information is requested to better clarify and understand the lump sum totals provided by the bidder so please be detailed in your description. Information provided will be incorporated into the bidder's original proposal documents and will be incorporated into the contract between Gila County and the contractor awarded the contract.**

**After reviewing the proposals and considering the possibility of ten or more antennas installed along the tower length, Gila County is concerned about overall tower loading. Consequently, Gila County now requires that the proposals be amended to include the opportunity for antenna number minimization if possible. The County understands the need for VHF, VHF directional antennas, UHF directional antennas, as well as other higher frequency antenna structures (Wi Fi) to allow for future communications needs of the County.**

In making this change to the proposals, bidders will not need to allow room on the tower for large microwave antennas (>2 foot diameter). Any future large microwave antennas will be installed on a separate structure.

**PLEASE PROVIDE DETAILED INFORMATION**

- A. Complete listing of the tower type (Manufacturer, Model Number)**
- B. Each antenna description, type, model number, mounting type, etc.**
- C. Transmission line(s), interconnect cables, etc.**
- D. Any opportunity for overall antenna minimization (RF Management Equipment, Duplexers, Combiners, Crystal Filters, Cavities, Isolators, etc.).**
- E. Provide a "Best and Final Offer" for project.**

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**Please include this request along with your responses in a sealed envelope as follows:**

**RESPONSES DUE: MONDAY, APRIL 30, 2012, 3:00 PM**

**SUBMITTAL LOCATION: GILA COUNTY PURCHASING  
ATTN: VALRIE BEJARANO  
1400 E. ASH STREET  
GLOBE, AZ 85501**



## **ADDENDUM #1**

**Gila County Bid No. 103111-2**

**S.O. Tower Installation & Radio Equipment Relocation Project**

*The following amendments are hereby incorporated into the bid documents for the above stated project:*

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February 24, 2012

### **Corrections to Bid Document**

- Page 3, Item #8, **Mandatory Pre-Bid Walk Through**

There is a mandatory site walk through scheduled for ~~Thursday~~ Friday **March 2, 2012, 10:00 am.**

- Page 4, ***Requirements***, paragraph 4

For technical specification clarification contact ~~Undersheriff Adam Shepherd~~ Lt. Mike Johnson:

- Mailing address is Gila County Sheriff's Office, ~~108 West Main Street, Payson, Arizona, 85541~~, or email to ~~[ashepherd@co.gila.az.us](mailto:ashepherd@co.gila.az.us)~~, 1100 South Street, Globe, Arizona, 85501, or email to [mjohnson@co.gila.az.us](mailto:mjohnson@co.gila.az.us).



## **ADDENDUM #2**

**Gila County Bid No. 103111-2**

**S.O. Tower Installation & Radio Equipment Relocation**

*The following amendments are hereby incorporated into the bid documents for the above stated project:*

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March 7, 2012

**BID DUE DATE HAS BEEN CHANGED TO: 3:00 PM, THURSDAY, MARCH 22, 2012**

- Questions will be accepted until 4:00 pm, Friday, March 9, 2012, and answers sent out as an addendum by 12:00 noon, Tuesday, March 13, 2012.
- Send all questions to [vbejarano@co.gila.az.us](mailto:vbejarano@co.gila.az.us).

### **Attachments**

- Exhibit "A", List of items available for re-use on project.
- Exhibit "B", Geotechnical Engineering Report
- Exhibit "C", Mandatory Walk Through Sign-In List

# Gila County Sheriff's Office

## Gila County Communications Center Tower Project

11-AZDOHS-HSGP-888303-01

Gila County Request for Bids 103111-1

List of items available for re-use on this project

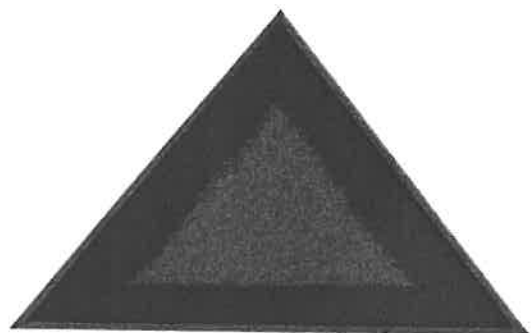
Item #	Description	Spectrum	Make	Model	Appx Age	Control For
1	Base Station Radio	VHF	I-Com	FR-3000	7	1 Pinal
2	Base Station Radio	VHF	I-Com	FR-3000	7	1 MTORD
3	Base Station Radio	UHF	I-Com	FR-4000	7	AIRS 3
4	Mobile Control Station	VHF	Motorola	CDM-1250	2	Canyon FD
5	Mobile Control Station	VHF	Motorola	XPR-4550	1	Tri City FD
6	Mobile Control Station	VHF	Tait	TM-8200	6	C1AZTC
7	Mobile Control Station	VHF	Tait	TM-8200	6	C2NORT
8	Mobile Control Station	VHF	Tait	TM-8200	6	C3SOUT
9	Mobile Control Station	VHF	Vertex	VX-2000	~11	3MTORD
10	5 IP/Radio Interfaces	N/A	Telex	IP-223	6	Various
11	Standby Repeater	VHF	Motorola	MTR-2000	Unk.	1 Pinal Rpt.
12	Point to Point Wi-Fi	GHz			~3	Network
13	X Omni-Directional Antennas	VHF	Various	N/A	<11	Various
14	X Omni-Directional Antennas	UHF	Various	N/A	<11	Various
15	X Uni-Directional Antennas	VHF	Various	N/A	<11	Various
16	X Uni-Directional Antennas	UHF	Various	N/A	<11	Various
17	Standby Repeater	N/A	Various	N/A	<11	Various
18	2 x 12 and 1 x 24 Power Supply	N/A				

### Important Points to Remember:

- 1 The antenna system for the standby repeater is essential to the project
- 2 All employees/subs will be subject to background and E-Verify checks
- 3 Don't forget sales tax on applicable items
- 4 Not looking for lowest bid, looking for conformity to requirements for amount stated
- 5 Any FCC issues with licensing will be resolved by the Sheriff's Office at no cost to successful bidder
- 6 Components subject to normal deterioration should be installed as new equipment; other durable components with expected longevity and equivalent performance to new can be supplied as reconditioned
- 7 The Sheriff's Office will work with the winning contractor to coordinate equipment relocation as to minimize interruption of service to first responders.

### FCC Licenses involved in this project:

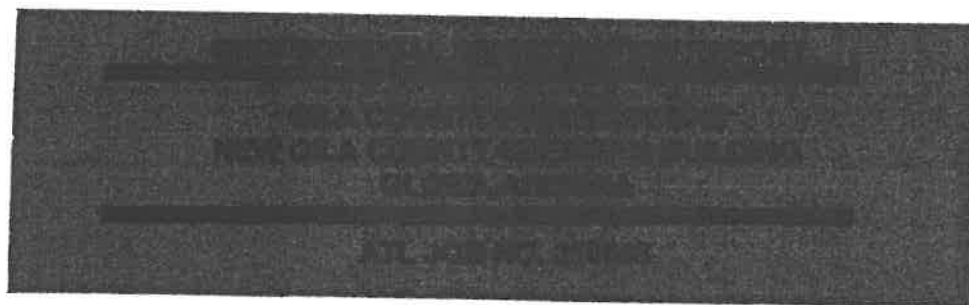
WPZQ440- 1Pinal  
 WQHJ853- C1AZTC, C3SOUT  
 WPGS695- 1MTORD



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*Excellence In Quality*

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**Q.A./Q.C. ENGINEERING CONSULTANTS**  
**GEOTECHNICAL   ▪   CIVIL   ▪   ENVIRONMENTAL**



April 28, 2010



Mr. Steve Stratton  
Public Works Director  
Gila County  
1400 E Ash Street  
Globe, Arizona 85501-1414

**Re: Geotechnical Investigation Report  
Gila County Sheriff's Building  
Globe, Arizona  
ATL Job No. 210068**

Dear Mr. Stratton:

This Report presents the results of a geotechnical investigation performed for the proposed new Sheriff's Building for Gila County in Globe, Arizona. The building will be a single story and 7,500 ft<sup>2</sup> in area. The purpose of the investigation was to determine the onsite soils support capability and provide general foundation support recommendations. Field exploration, laboratory test results and engineering analysis are presented in this Report including guidelines for the re-use of the onsite material during construction.

The exploration program consisted of drilling two boreholes each to a depth of 15 feet to obtain samples and provide preliminary soil classifications and in-situ moisture conditions. The laboratory testing provided the data used to determine the classification and the support capability of the in-situ soils as well as their use as construction material.

ATL has appreciated the opportunity to be of service to Gila County and looks forward to continued association on future projects. Should any questions arise, please do not hesitate to contact us at your earliest convenience.

Prepared by:

Poto Chongo, P.E.  
Senior Geotechnical Engineer



Expires 3/31/2011

Reviewed by:

David P. Hayes, P.E.  
Executive Vice President



Expires 3/31/12

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**GEOTECHNICAL INVESTIGATION REPORT**  
**FOR**

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**GILA COUNTY PUBLIC WORKS**

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**PROJECT**

**NEW GILA COUNTY SHERIFF'S BUILDING  
GLOBE, ARIZONA**

**ATL JOB NO. 210068**

**Prepared by:**

**Poto Chongo, P.E.  
Senior Geotechnical Engineer**



Expires **3/31/2011**

**Reviewed by:**

**David P. Hayes, P.E.  
Executive Vice President**



Expires **3/31/12**



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	<b>Moisture Contents</b>	
	<b>Standard Proctor</b>	

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**GEOTECHNICAL INVESTIGATION REPORT**  
**FOR**

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**GILA COUNTY PUBLIC WORKS**

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**PROJECT**

**NEW GILA COUNTY SHERIFF'S BUILDING  
GLOBE, ARIZONA**

**ATL JOB NO. 210068**

**1.0 PROJECT DESCRIPTION**

This Report presents the results of a geotechnical investigation conducted for the planned New Gila County Sheriff's Building. The County intends to construct a slab and footings for a one-story, 7,500 ft<sup>2</sup> building and place a used steel frame for the structure. The project is located in Globe, Arizona.

**2.0 GEOLOGIC DESCRIPTION**

The project site is located in Globe, Arizona and lies within the Pinal Creek Basin bounded by Pinal Mountains to the south and Apache Peaks and Globe Hills to the east. This area is characterized by typical basin and range structure with northwest trending ranges of igneous and metamorphic rocks separated by valleys filled with alluvial deposits. Within the Pinal Creek Basin, there are two main strata of soils above the bedrock: Gila Conglomerate and unconsolidated alluvial deposits. The sediments of the Gila Conglomerate were derived from the late Cenozoic Era block faulting. The unconsolidated alluvial deposits stratum above the bedrock is 150 feet thick and 900 to 2,400 feet wide.

### **3.0 SCOPE OF WORK**

ATL's work scope was to determine the subsoil supporting capability for the new building structure and present general recommendations for foundations and re-use of native material for construction. The data obtained from the field effort and laboratory testing was used to produce this geotechnical report which presents the following information:

- Allowable bearing capacity and differential and total settlements.
- Lateral pressures using native soil backfill.
- Potential uses for excavated in-situ material.

Included in this Report are copies of the borehole logs, a borehole location map, a vicinity map, and a summary of the laboratory tests performed for the project. Four (4) copies of the hard-bound Report, along with an electronic copy, PDF format are provided for your use. Remaining soils samples will be stored for 30 days after completion of the Report and then discarded unless previous arrangements are made.

### **4.0 EXPLORATION PROGRAM**

For the project, the proposed drilling depth of the two (2) boreholes was 15 feet below existing grade. Refusal was encountered before the proposed depth, resulting in the termination of two boreholes at 11.5 feet and 13 feet. A CME 75, truck-mounted drill rig, owned and operated by D & S Drilling, utilizing a 8-inch O.D. hollow stem auger, was used to perform drilling and sampling of the subsurface soils. Standard Penetration Tests (SPT's) were performed at 2.5 feet, 5 feet, and at 5-foot intervals thereafter to the bottom of each borehole. A 140-pound hammer dropping 30 inches was used to drive the split spoon sampler 6 inches. Blow counts were recorded for each 6-inch interval and then summed for the last 12 inches. This is the uncorrected "N" value at that depth. All laboratory testing was performed on soil samples obtained for the SPT sampler or bulk samples off the auger flights.

Upon completion of drilling, all bore holes were backfilled with spoils obtained during drilling. The areas adjacent to each of the bore holes were cleaned of all excess soil. All samples obtained were transported to ATL's Phoenix laboratory for testing.

### **5.0 LABORATORY TESTING**

Upon receipt of the samples in the laboratory, test type and quantity were assigned as indicated in Table 5.0:

Table 5.0 – Laboratory Testing Schedule

Test	Quantity	Method
Sieve Analysis	2	ASTM D-422
Plasticity Index	2	ASTM D-4318
Moisture Content	2	ASTM D-4959
Standard Proctor	1	ASTM D-698

- Visual field classifications were modified by the results of laboratory testing (*Sieve Analysis* and *Plasticity Index*) and classified in accordance with the *Unified Soils Classification System*.
- *In-situ Moisture Content* tests were performed to determine the amount of water present in the soil at the time of sampling.
- *Standard Proctor Analysis* was completed to determine the relationship between the maximum dry density and optimum moisture content of the tested material.

## 6.0 SUMMARY OF EXISTING CONDITIONS

The existing conditions presented in the subsections below were derived from field observations and laboratory test results.

### 6.1 Field Observations

- The material encountered in the top 13.0 feet of drilling was SAND and GRAVEL with varying amounts of clay and silt.
- The material did not react to hydrochloric acid.
- The uncorrected "N" values determined from the Standard Penetration Tests (SPT) in the top 5 feet, ranged from 10 to over 50 blows per foot (stiff to hard). Below 5 feet to the bottom of the boreholes, the blow counts varied from 46 to over 50 blows per foot (very firm to hard).
- Ground water was not encountered during the investigation. This observation represents the conditions at the time of exploration and may not be indicative of other conditions at other times during the year. The Owner should be aware that soil moisture conditions will fluctuate with varying local conditions, changes in surface and subsurface drainage patterns and contributing adjacent land areas.

## 6.2 Laboratory Test Results Summary

The laboratory tests results are summarized in Tables 6.2a through 6.2c be

- Table 6.2a below summarizes the soil classification properties:

**Table 6.2a – Soil Properties**

Borehole No.	Depth (ft)	Soil Classification	Minus 200 (%)	Plasticity Index	Liquid Limit
B-1	0.0 – 7.0	SC	23	16	36
B-2	5.0 – 10.0	GC-GM	17	6	24

- Table 6.2b presents the subsoil in-situ moisture contents at various dep

**Table 6.2b – In-Situ Moisture Content**

Borehole No.	Depth (ft)	In-Situ Moisture Content (%)
B-1	7.0	2.8
B-2	10.0	3.4

- Table 6.2c presents the standard proctor value of the sampled on-site S

**Table 6.2c –Maximum Dry Density**

Borehole No.	Depth (ft)	Soil Classification	Maximum Dry Density (pcf)	Optimum Moisture (%)
B-1	0.0 – 7.0	SC	123.7	10.2

## 7.0 DISCUSSION AND RECOMMENDATIONS

Recommendations presented in the following sections are based on the assumption soils encountered during construction will be similar to those encountered in the. Because the test borings represent a very small statistical sampling of subsurface co it is possible that conditions may be encountered during construction that are sub: different from those indicated by the soil test borings. If variations are notec construction, or if changes are made in the site plan, structural loadings, etc., ATL s notified to determine if the design elements need revising.

## 7.1 Foundation Design Recommendations

The soil in the top 13 feet was generally well consolidated as indicated by high "N" values from the field investigation. However, scarification and re-compaction of the foundation bearing material in the top 8 inches will be required to eliminate localized soft spots and ensure uniform compaction below foundation elements. This will minimize both the total and differential settlements. Compaction requirements are specified in Section 8.0.

Because the vertical loadings were unknown at time this report was published, ATL assumed maximum concentrated loads of 50 kips and if used, continuous footing loads of 3 kips per foot. All foundations, including exterior wall footings, should bear on native granular material. A one-third increase in allowable bearing capacity is permissible when considering wind or seismic loadings. Allowable bearing capacity values presented in the following Table 7.1 are "net" values, ignoring the weight of the concrete in the footings. Also note that "finish grade" references are to the lowest adjacent outside final grade for perimeter footings and for the floor elevation for interior spread footings.

**Table 7.1 – Foundation Parameters**

Item	Spread Footings	Continuous Footings
Coefficient of Friction	0.35	0.35
Vertical Load (Estimated)	30 kips	3 kips/ft
Footing Bearing Material	8 inches of scarified and re-compacted Native Granular Material	8 inches of scarified and re-compacted Native Granular Material
Minimum Depth Embedment Below Grade	18 inches	18 inches
Allowable Bearing Capacity	3,000 psf	3,000 psf
Estimated Friction Angle	37°	37°
<b><u>Anticipated Settlements</u></b>		
Total:	Less than 0.5 inch	Less than 0.5 inch
Differential:	Less than 0.5 inch	Less than 0.5 inch
Modulus of Subgrade Reaction(k)	250 pci	250 pci

When constructing the foundations, the following conditions must be followed:

1. Positive drainage away from building foundations must be created around the entire perimeter, both during construction and after completion.
2. During construction, footing bottoms should be cleaned and loose material removed prior to steel reinforcement and concrete placement.
3. Density tests must be conducted on material placed in the over-excavated areas below the bottom of the footings.

4. ATL should be contacted to inspect the footings after the density tests have been completed to verify that the guidelines presented in this report have been met.

## 7.2 Building Slab-On-Grade

A layer of aggregate base at least 4-inches thick shall be compacted between the concrete slab and the 8 inches of scarified subgrade material. Compaction requirements are presented in Table 8.6. If moisture sensitive floor coverings are used, then consideration should be given to the installation of a suitable vapor barrier below the slab.

It is important that control and expansion joints be used in the concrete slabs, properly spaced and properly constructed. Control joints, if sawed, must be no less than 1/3 the slab thickness and must be constructed before the concrete hardens, usually within three (3) hours of concrete placement. If a concrete hardener is used, it must be compatible with mix admixtures and should be constructed so that concrete laitance is not brought to the surface. If not controlled, excessive shrinkage may occur and result in "crazing" of the surface.

## 7.3 Lateral Pressures

Table 7.3 provides an equivalent fluid pressure analysis, developed by Rankine, for the native granular soils. The values shown are based on the assumption that the backfill soils will be compacted to 95% of the standard proctor maximum dry density at optimum moisture content. Estimated values are presented in Table 7.3:

**Table 7.3 –Lateral Pressures**

Description	Granular Native Soils
Friction Angle	37°
Wet Unit Weight at 95% Compaction	130.0 pcf
Active Pressure	32 psf/ft
Passive Pressure	523 psf/ft*
At-Rest Pressure	52 psf/ft

\*Wall movement typically occurs near 350 psf/ft.

## 7.4 Seismic Design Parameters

A Site Class designation of D should be used for the site per Table 1615.1.1 of the 2006 International Building Code (IBC) because the subsoils were not investigated to a depth of at least 100 feet. The following seismic parameters may be used for design.



**Table 7.4 –Seismic Design Parameters**

Seismic Parameter Description	Value
MCE* Spectral Response Acceleration for 0.2 Second Period, $S_s$	0.30
MCE* Spectral Response Acceleration for 1.0 Second Period, $S_s$	0.08
Site Coefficient, $F_a$	1.6
Site Coefficient, $F_v$	2.4
MCE* Spectral Response Acceleration Adjusted for Site Class, $S_{MS}$	0.48
MCE* Spectral Response Acceleration Adjusted for Site Class, $S_{M1}$	0.19
5% Damped Spectral Response Acceleration, $S_{DS}$	0.32
5% Damped Spectral Response Acceleration, $S_{D1}$	0.13

\*MCE= Maximum Considered Earthquake

#### 7.5 **Pavement Design Recommendations**

The newly constructed pavements on this site will consist of an entry off of Ash Street and the parking lot. The pavement will be subjected to medium passenger car, pick-up truck and delivery truck traffic.

The pavement section for this type of pavement is typically constructed of asphaltic concrete (AC), over an aggregate base, over a prepared subgrade.

For the design of the pavement section, ATL used the National Stone Association Flexible Pavement Design Guide developed by the US Corps of Engineers. The pavement section was designed using the following parameters:

- Subgrade classified as "Good".
- Medium traffic

A Design Index of DI-1 was determined from the above parameters. Using these parameters, the following pavement sections were recommended:

**Table 7.5a – AC Pavement Component Thickness**

Location	AC (in.)	ABC (in.)	Subgrade
Parking and Access Drives	3.0	4.0	Native Material

It is recommended that Portland Cement Concrete Pavement (PCCP) be used in areas that will experience heavier stationary loads, such as trash dumpster pads and loading areas. The recommended non-reinforced rigid pavement is as follows:

**Table 7.5b- PCCP Pavement Component Thickness**

Location	PCCP (in.)	ABC (in.)
Trash Collection Areas	5.0	4.0

**7.6 Landscaping and Drainage**

Positive drainage away from structures should be incorporated into the design plans. Ponding of water adjacent to the building and/or pavement could contribute to significant moisture increases in the subgrade soils and subsequent movement of subgrade. Final grades around the new structure should be such that at least a 5% slope away from the exterior walls exists, with water eventually draining into designated collection areas or gutters.

Landscaping requiring regular watering should be planted no closer than five (5) feet from the building foundations and should utilize plants with low water needs. It will also be necessary to maintain drainage away from the structure footprint area during construction and the contractor should be required to submit a drainage plan showing how he intends to do this. In no case should long term ponding of water be allowed near the building during or after construction.

**7.7 Utilities**

Utility trenches are typically poorly compacted and settle over time. Compaction testing and full time inspection must be conducted to ensure conformance to compaction and moisture content specifications. The width of the trenches should also be minimized as much as possible to reduce the effect on differential settlement.

**8.0 GENERAL CONSTRUCTION RECOMMENDATIONS**

For this project, ATL recommends that the Maricopa Association of Governments Standard Specifications (MAG) be used as a base specification. The following subsections provide additional details that may be used in the special provisions. The Designer has the option to use any appropriate specification as long as the pavement design is not compromised.

**8.1 Site Preparation**

Concrete pavement, building rubble, concrete foundations and any other debris noted at or below the existing ground surface should be removed as part of the site preparation for the proposed construction area. In all new fill and excavation areas, vegetation, topsoil, roots and other deleterious materials (typically 4 to 6 inches), deemed unsuitable shall be removed from the proposed construction areas, and replaced with controlled fill. Site clearing, grubbing and stripping will need to be performed only during dry weather conditions. Operation of heavy equipment on the site during wet conditions could result in excessive rutting and mixing of organic debris with the underlying soils. The Owner should be contacted to observe the excavation to verify and document that all unsuitable material is removed.

## 8.2 Excavation and Backfill

Granular material excavated from utility cuts may be re-used as backfill or as fill in areas where slab or foundation is to be constructed. However, fine-grained material should not be used for this purpose.

Excavations for this project shall conform to the OSHA Health and Standards, 29 CFR Part 1926 requirements. It is recommended that the Contractor consult with the Geotechnical Engineer prior to the construction of slopes for any excavations greater than 4 feet in depth associated with this site. If the Contractor chooses to design shoring, the design should be submitted to the Geotechnical Engineer for approval prior to use. Additional requirements for access and egress, safety and protection are included in Subpart P and must be adhered to.

The import material used to construct pads or other areas supporting structural elements should meet the gradation provided below as a guideline:

<u>Sieve Size</u>	<u>Percent Passing</u>
2"	100
3/4"	60 - 100
No. 4	35 - 95
No. 200	0 - 40

Plasticity Index  $\leq 10$

The Contractor should submit gradation and plasticity tests for each proposed borrow source for review by the Engineer. The fill shall be placed in lifts not exceeding twelve (12) inches and compacted to no less than 95% of Standard Proctor at a moisture content of  $\pm 2\%$  of optimum.

## 8.3 Aggregate Base Course

The final subgrade should be proof-rolled immediately prior to placement of the concrete or asphalt to detect any localized areas of instability. Unstable areas should be reworked to provide a uniform subgrade. Proof rolling operations should be observed by the Owner's representative.

The design parameters used in this report assume an ABC with a structural coefficient no less than 0.12. MAG Table 702-1, along with the quality requirements of Section 702-2, should be used to determine ABC acceptability. Construction should be performed in accordance with MAG Section 310.

## 8.4 Portland Cement Concrete

All Portland cement concrete shall meet the compressive strength requirements specified by the Engineer. The Contractor should submit a mix design for each mix required by the contract documents for approval prior to beginning construction. All concrete shall conform to MAG Section 725, etc. requirements for design, placement and curing.

### 8.5 Asphaltic Concrete

A MAG C¾ mix is recommended, designed locally with an appropriate bitumen content and air void range. ATL suggests using a performance graded 70-10 bitumen. Aggregates used in the mix should conform to MAG Section 321 requirements and a design from a local plant should be submitted to the Owner or the Owner's Representative for review prior to beginning work.

It is recommended that the asphaltic concrete section be placed in one lift. This will improve density and minimize check cracking. It is important that the break-down rolling begin within the temperature range specified in the mix design and that hand-raking of the surface be limited to the edges. A prime coat over the ABC is not needed unless rain is anticipated from the time the ABC is blue-topped to the time the pavement is placed. It is also important that the subgrade be blue-topped to ensure constant thickness of the overlying ABC and AC pavement layers.

### 8.6 Compaction

MAG should be used as a specification guide. However, compaction should not be less than that specified in Table 8.6.

**Table 8.6 – Compaction Requirements**

Description	Moisture Requirement	Compaction Requirement
<b>Pavement:</b>		
Aggregate Base	Optimum ±2%	100% ASTM D698
Subgrade	Optimum ±2%	95% ASTM D698
<b>Slab:</b>		
Aggregate Base	Optimum ±2%	95% ASTM D698
Subsoils	Optimum ±2%	95% ASTM D698
Subgrade Below Foundation Elements	Optimum ±2%	95% ASTM D698
Backfill from one foot over Utilities to grade	Optimum ±2%	95% ASTM D698
Non-Structural Fill	Optimum ±2%	90% ASTM D698

Frequency of density testing should be no less than one per 2,500 sq ft of soils or ABC under the slab and parking areas. Asphaltic concrete testing frequencies should conform to MAG requirements.

### 9.0 LIMITS OF SERVICE

The analyses and recommendations in this report are based in part upon data obtained from the field exploration. The nature and extent of variations beyond the location of the bore holes may not become evident until construction. If variations appear evident, it may be necessary to re-evaluate the recommendations of this report.

ATL's professional services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this

or similar localities. No warranty, express or implied, is made. ATL prepared this Report as an aid in design of the proposed project.

This report is for the exclusive purpose of providing geotechnical engineering and/or testing information and recommendations. The scope of services for this project does not include, either specifically or by implication, an environmental assessment of the site or identification of contaminated or hazardous materials or conditions.

If there are questions concerning this report, do not hesitate to contact the author. If you need materials testing services during the construction of this project, ATL is a full-service laboratory that maintains a staff of certified technicians and professional engineers that are proficient in all aspects of inspection and testing, including NDT for steel erection.

#### 10.0 REFERENCES

- *Foundation Analysis and Design*, by Joseph Bowles.
- *Uniform Standard Specifications for Public Works Construction*, Maricopa Association of Governments, 2001.
- *International Building Code, 2006*, International Code Council, Inc.

## ***PLATES***

## **GUIDELINES IN THE USE AND INTERPRETATION OF THIS GEOTECHNICAL REPORT**

---

ATL Job No. 210068

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

The geotechnical report was prepared for the use of the Owner in the design of the subject facility and should be made available to potential contractors and/or the Contractor for information on factual data only. This report should not be used for contractual purposes as a warranty of interpreted subsurface conditions such as those indicated by the interpretive boring and test pit logs, cross sections, or discussion of subsurface conditions contained herein.

The analyses, conclusions and recommendations contained in the report are based on site conditions as they presently exist and assume that the exploratory borings, test pits, and/or probes are representative of the subsurface conditions of the site. If, during construction, subsurface conditions are found which are significantly different from those observed in the exploratory borings and test pits, or assumed to exist in the excavations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. If there is a substantial lapse of time between the submission of this report and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, this report should be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

The Summary Boring Logs are our opinion of the subsurface conditions revealed by periodic sampling of the ground as the borings progressed. The soil descriptions and interfaces between strata are interpretive and actual changes may be gradual.

The boring logs and related information depict subsurface conditions only at these specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the soil conditions at these boring locations.

Groundwater levels often vary seasonally. Groundwater levels reported on the boring logs or in the body of the report are factual data only for the dates shown.

Unanticipated soil conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking soil samples, borings or test pits. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. It is recommended that the Owner consider providing a contingency fund to accommodate such potential extra costs.

This firm cannot be responsible for any deviation from the intent of this report including, but not restricted to, any changes to the scheduled time of construction, the nature of the project or the specific construction methods or means indicated in this report; nor can our firm be responsible for any construction activity on sites other than the specific site referred to in this report.

## SOIL CLASSIFICATION & TERMINOLOGY

GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
	GW	Well-graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixture
	GW-GM	Well-graded gravel with silt
	GP-GM	Poorly graded gravel with silt, sand, cobbles and boulders
	SP-SM	Poorly graded sand with silt
	SW-SM	Well-graded sand with silt
	SM	Silty sands, sand-silt mixtures
	SC-SM	Clayey silty sands, clayey sands with silt, silty clays with sand
	SC	Clayey sands, sand-clay mixtures
	ML	Inorganic silts, clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	CL - ML	Clays and silts with sands, clay, silt and sand mixtures
	CH	Inorganic clays of medium to high plasticity, gravelly clays, sandy clays, silty clays, lean clays
	-	Aggregate Base Course
	-	Asphaltic Concrete
	-	Portland Cement Concrete Pavement
	-	Clinders - Commonly with Silty or Clayey Sands
	-	Weathered Bedrock - Commonly with Clays, Silts, Sands and Gravels
	-	Bedrock

### 1. RELATIVE DENSITY - TERMS FOR DESCRIPTION OF RELATIVE DENSITY OF COHESIONLESS, UNCEMENTED SANDS AND SAND-GRAVEL MIXTURES

N	RELATIVE DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
>50	VERY DENSE

### 2. RELATIVE CONSISTENCY - TERMS FOR DESCRIPTION OF CLAYS WHICH ARE SATURATED OR NEAR SATURATION

N	RELATIVE CONSISTENCY	REMARKS
0-2	VERY SOFT	EASILY PENETRATED SEVERAL INCHES WITH FIST
3-4	SOFT	EASILY PENETRATED SEVERAL INCHES WITH THUMB
5-8	MEDIUM STIFF	CAN BE PENETRATED SEVERAL INCHES WITH THUMB WITH MODERATE EFFORT
9-15	STIFF	READILY INDENTED WITH THUMB BUT PENETRATED ONLY WITH GREAT EFFORT
16-30	VERY STIFF	READILY INDENTED WITH THUMB NAIL
>30	HARD	INDENTED ONLY WITH DIFFICULTY BY THUMB NAIL

### 3. RELATIVE FIRMNESS - TERMS FOR DESCRIPTION OF PARTIALLY SATURATED AND/OR CEMENTED SOILS WHICH COMMONLY OCCUR IN THE SOUTHWEST INCLUDING CLAYS, CEMENTED GRANULAR MATERIALS, SILTS AND SILTY AND CLAYEY GRANULAR SOILS

N	RELATIVE FIRMNESS
0-4	VERY SOFT
5-8	SOFT
9-15	MODERATELY FIRM
16-30	FIRM
31-50	VERY FIRM
>50	HARD

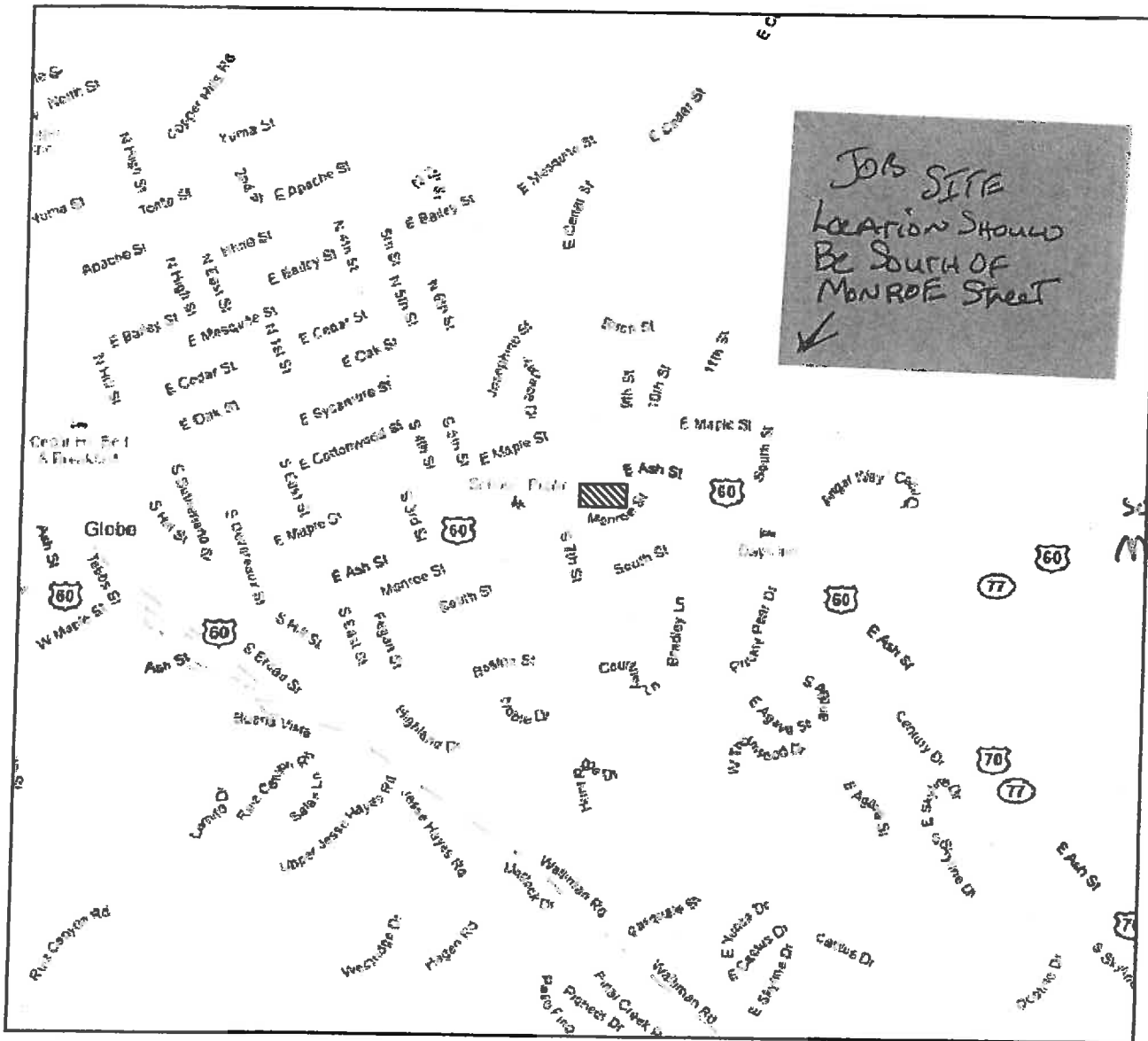
### 4. STANDARD PENETRATION TESTS (SPT)

- Blows/ft

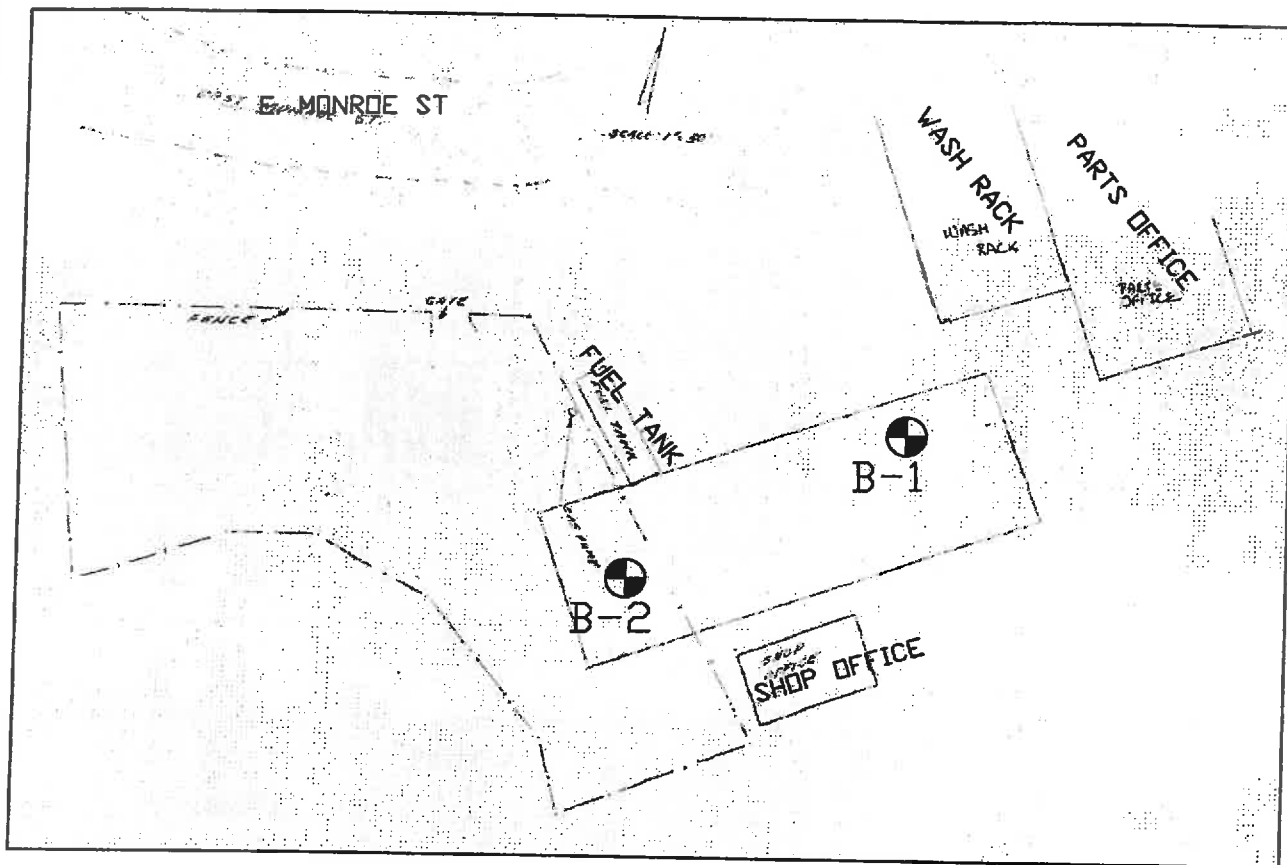
## DEFINITIONS OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
<u>COBBLES</u>	Above 3 inches
<u>GRAVEL</u>	3 inches to No.4 sieve
Coarse gravel	3 inches to 3/4 inch
Fine gravel	3/4 inch to No. 4 sieve
<u>SAND</u>	No. 4 sieve to No. 200
Coarse	No. 4 sieve to No. 10
Medium	No. 10 sieve to No. 40
Fine	No. 40 sieve to No. 200
<u>FINES (silt or clay)</u>	Below No. 200 sieve





# VICINITY MAP NEW SHERIFF'S BUILDING GLOBE, ARIZONA



BOREHOLE LOCATION



NOT TO SCALE

# BOREHOLE LOCATION MAP NEW SHERIFF'S BUILDING GLOBE, ARIZONA

***APPENDIX A***  
***BOREHOLE LOGS***



GILA COUNTY PUBLIC WORKS  
NEW SHERIFF'S BUILDING  
GLOBE, ARIZONA

ATL Job No.  
210068  
Bore Hole No.  
B-1

Bore Hole Location: 80 Feet North and 30 Feet West of Southeast  
Property Corner

Boring Equipment: CME 75 with 8" O.D

Drilling Firm: D & S Drilling, Inc.

Date: 04/19/2010

Elevation of Borehole: Existing

Logger: NG

Reviewed By: PC

Graphical  
Log

Depth  
(Feet)

## SOIL DESCRIPTION

SPT  
Blows/ft

Ring  
Blows/ft

Water  
Content %

Plasticity  
Index

Fines  
Content (%)

In-Situ  
Density (pcf)

Reddish Brown Clayey SAND with Gravel (SC)  
Dry-to-Moist and No Reaction to HCl  
Non Plastic and Medium-to-Coarse Grained  
Sub-Angular-to-Sub-Rounded

10

36

50/6"

42

16

16

2.8

5.0

10.0

15.0

20.0

25.0

30.0

Borehole Terminated at 11.5 Feet

Hole Stopped At 11.5 Feet Below Existing Grade

  
Groundwater

Groundwater Observed

NO

Initial Depth

24 Hour Depth

NOTE: THE ABOVE DATA FOR DESIGN PURPOSES ONLY.

A1

The Stratification Lines Represent the Approximate Soil  
Boundaries And The In-Situ Transitions May Be Gradual



GILA COUNTY PUBLIC WORKS  
NEW SHERIFF'S BUILDING  
GLOBE, ARIZONA

ATL Job No.  
210068  
Bore Hole No.  
B-2

Bore Hole Location: 80 Feet North and 30 Feet West of Southeast  
Property Corner

Boring Equipment: CME 55 with 6-1/4 O.D

Drilling Firm: D & S Drilling, Inc.

Date: 04/19/2010

Elevation of Borehole: Existing

Logger: NG

Reviewed By: PC

Graphical  
Log

Depth  
(Feet)

## SOIL DESCRIPTION

SPT  
Blows/ft

Ring  
Blows/ft

Water  
Content %

Plasticity  
Index

Fines  
Content (%)

In-Situ  
Density (pcf)

Reddish Brown Clayey SAND with Gravel  
Dry-to-Moist and No Reaction to HCl  
Non Plastic and Medium-to-Coarse Grained  
Sub-Angular-to-Sub-Rounded

44

5.0

Reddish Brown Silty Clayey GRAVEL with Sand  
(GC-GM)  
Dry-to-Moist and No Reaction to HCl  
Non Plastic and Medium-to-Coarse Grained  
Sub-Angular-to-Sub-Rounded

64

10.0

60

3.4

6

17

Borehole Terminated at 13.0 Feet

15.0

20.0

25.0

30.0

Bore Hole Stopped At 13.0 Feet Below Existing Grade



Groundwater Observed

NO

Initial Depth

24 Hour Depth

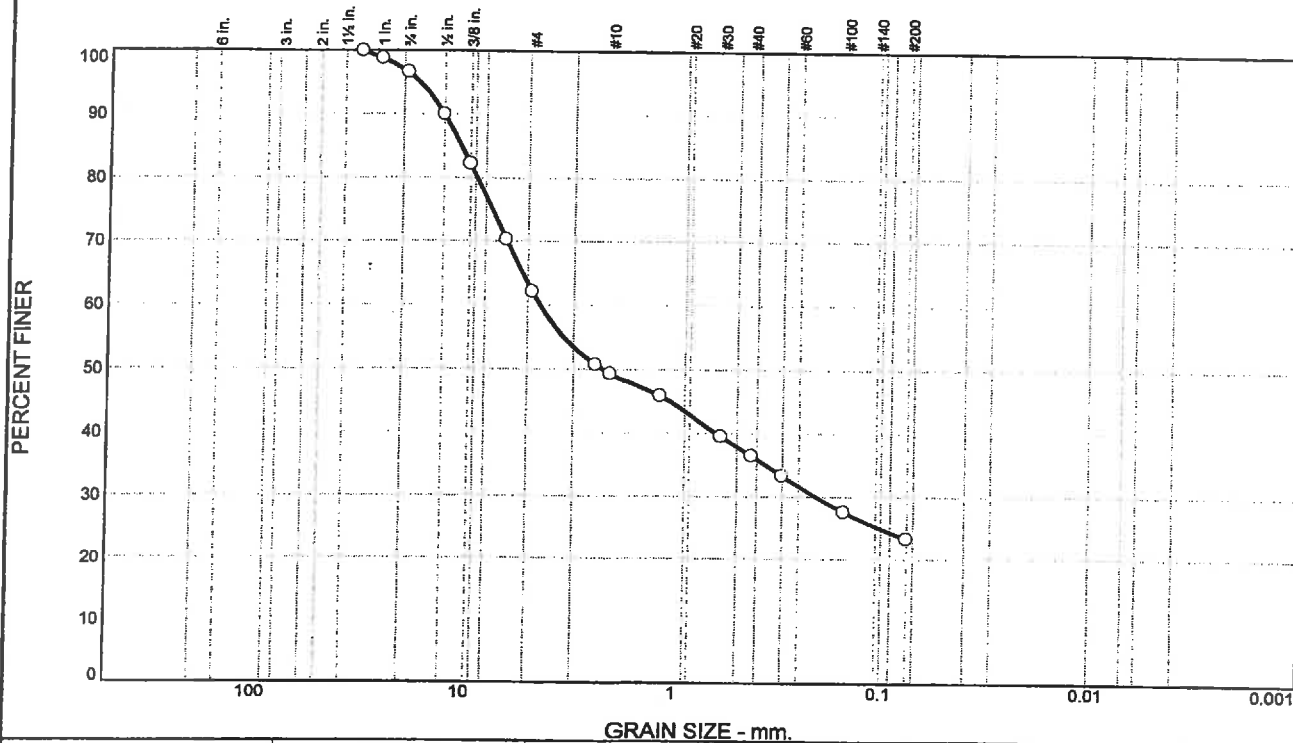
NOTE: THE ABOVE DATA FOR DESIGN PURPOSES ONLY.

A2

The Stratification Lines Represent the Approximate Soil  
Boundaries And The In-Situ Transitions May Be Gradual

***APPENDIX B***  
***LABORATORY TESTS***

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	35	13	13	13	23	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.25	100		
1.0	99		
3/4	97		
1/2	90		
3/8	82		
1/4	70		
#4	62		
#8	51		
#10	49		
#16	46		
#30	39		
#40	36		
#50	33		
#100	28		
#200	23		

\* (no specification provided)

**Material Description**  
Clayey SAND with gravel

**Atterberg Limits**  
 PL= 20      LL= 36      PI= 16

**Coefficients**  
 D<sub>85</sub>= 10.4793      D<sub>60</sub>= 4.3459      D<sub>50</sub>= 2.1814  
 D<sub>30</sub>= 0.2046      D<sub>15</sub>=      D<sub>10</sub>=  
 C<sub>u</sub>=      C<sub>c</sub>=

**Classification**  
 USCS= SC      AASHTO= A-2-6(0)

**Remarks**

Sample Number: 10-3086  
Source of Sample: B-1

Depth: 0.0'-7.0'

Date: 4/19/2010

ATL, INC.

Phoenix, AZ

Client: Gila County Public Works Division  
Project: Sheriff's Building

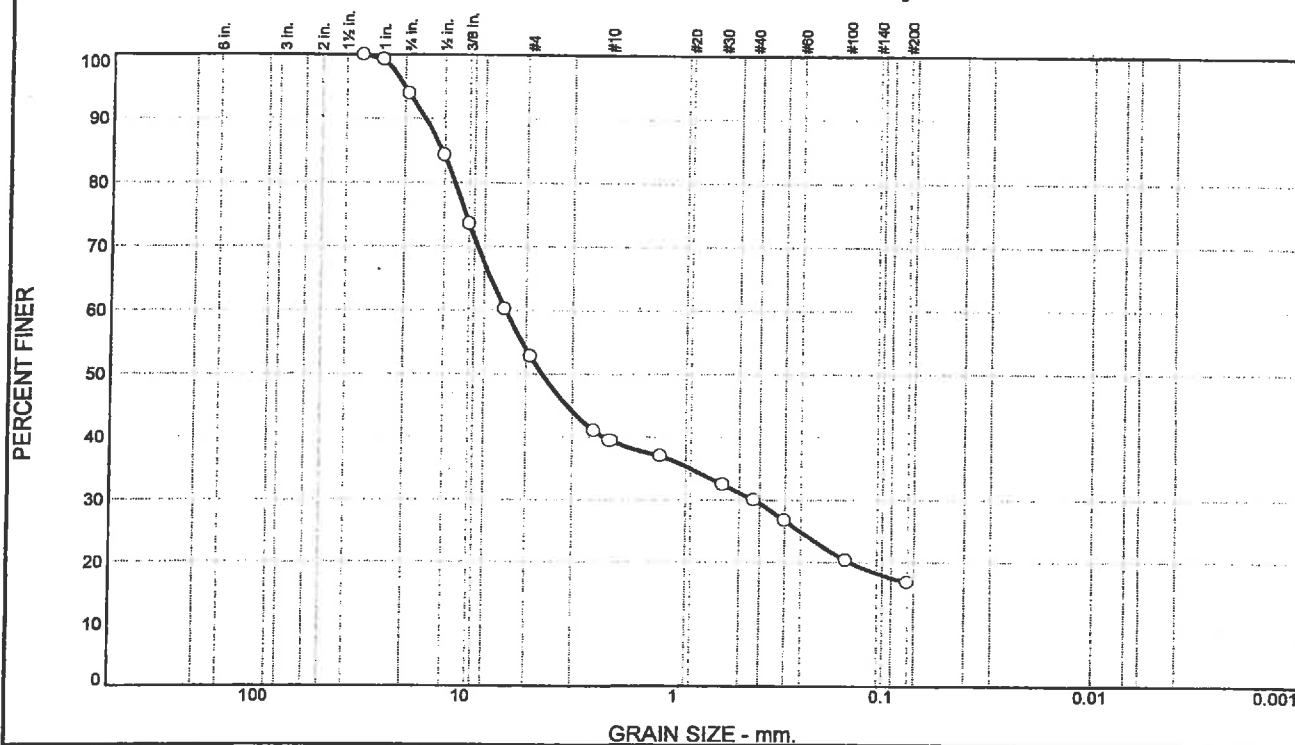
Project No: 210068

Figure

Tested By: EDC

Checked By: EDC

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	6	41	14	9	13	17	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.25	100		
1.0	99		
3/4	94		
1/2	84		
3/8	74		
1/4	60		
#4	53		
#8	41		
#10	39		
#16	37		
#30	32		
#40	30		
#50	27		
#100	20		
#200	17		

\* (no specification provided)

Material Description		
Silty clayey GRAVEL with sand		
<div> <div> Atterberg Limits </div> <div> PL= 18 LL= 24 PI= 6 </div> </div> <div> <div> Coefficients </div> <div> D<sub>85</sub>= 13.0161 D<sub>30</sub>= 0.4265 C<sub>u</sub>= D<sub>60</sub>= 6.3060 D<sub>15</sub>= C<sub>c</sub>= </div> <div> D<sub>50</sub>= 4.1936 D<sub>10</sub>= </div> </div> <div> <div> Classification </div> <div> USCS= GC-GM AASHTO= A-1-b </div> </div> <div> Remarks </div>		

Sample Number: 10-3088  
Source of Sample: B-2

Depth: 5.0'-10.0'

Date: 4/19/2010

ATL, INC.

Phoenix, AZ

Client: Gila County Public Works Division  
Project: Sheriff's Building

Project No: 210068

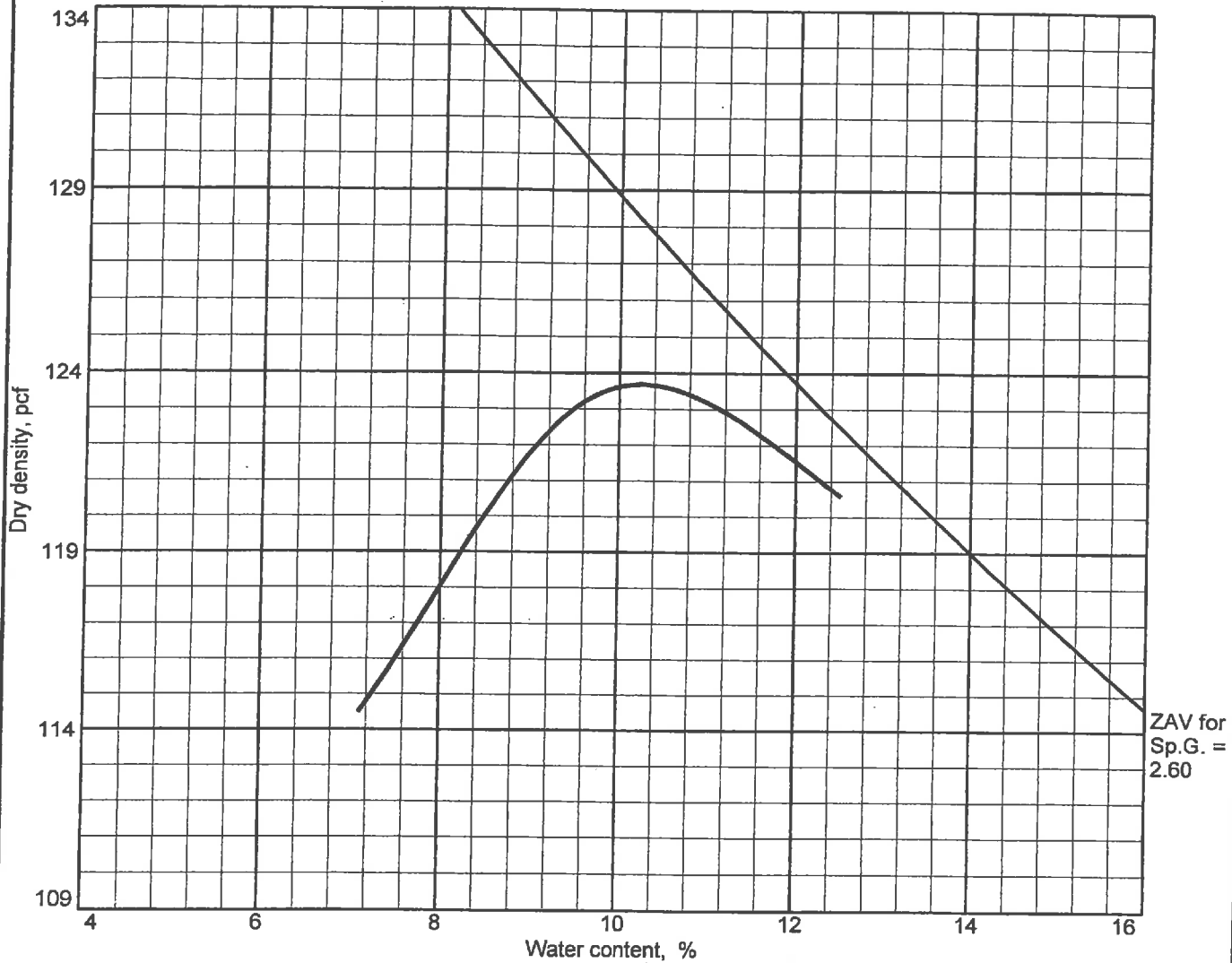
Figure

Tested By: EDC

Checked By: EDC



# COMPACTION TEST REPORT



Test specification: ASTM D 698-00a Method B Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
0.0'-7.0'	SC	A-2-6(0)			36	16	18.0	23

TEST RESULTS		MATERIAL DESCRIPTION
Maximum dry density = 123.7 pcf		Clayey SAND with gravel
Optimum moisture = 10.2 %		
Project No. 210068      Client: Gila County Public Works Division Project: Sheriff's Building		Remarks:
● Source: B-1      Sample No.: 10-3086      Elev./Depth: 0.0'-7.0'		
ATL, INC. Phoenix, AZ		

Figure

Figure



RECEIVED

APR 05 2010

GILA COUNTY  
PUBLIC WORKS

April 1, 2010

Mr. Steve Stratton  
Public Works Director  
Gila County  
1400 E Ash Street  
Globe, Arizona 85501-1414

**Re: Geotechnical Investigation  
New Building Sherriff's Department  
Gila County, Globe, Arizona  
ATL Proposal No. P10214**

Dear Stratton:

ATL Inc. (ATL) is pleased to submit the following proposal to provide a geotechnical investigation for the proposed new Sherriff's Building for Gila County in Globe, Arizona.

#### **Project Information**

The project site is located in the parking lot just below the existing court house in Globe. The building will be a single story, 7,500 ft<sup>2</sup> structure.

#### **Scope of Work**

ATL's scope of work will be to conduct a geotechnical investigation to determine the support capability of the existing subsoils and to recommend a foundation support configuration for the building.

#### **Field Investigation**

ATL will drill two (2) bore holes to a depth below grade of 15 feet each. The boreholes will be drilled by a truck -mounted drill rig utilizing a hollow stem auger. Standard Penetration Test (SPT) values will be obtained at 2.5 feet and, 5 feet below grade, and at 5 feet intervals below grade thereafter. Samples will be obtained by lowering a 1½ -inch split-spoon sampler into the hole through the hollow stem of the auger to the desired depth. The sampler will be subsequently driven 18-inches with a 140-pound hammer in accordance with ASTM Standard D-1586 in order to obtain undisturbed samples. The number of blows required to drive the sampler every 6-inch increment will be recorded, with the sum of the final two 6-inch increments recorded on the final borehole log. This is the uncorrected N value for that depth. The material inside the sampler will be collected in a plastic bag, sealed and transported to the laboratory. A 2½-inch ring sampler will be driven where possible to collect undisturbed samples for consolidation and swell tests. This testing will also provide information relative to subsidence potential. Bulk samples will also be continuously obtained off the auger flights during the drilling operation for tests that require large sample quantities. The actual sampling of the materials will be dictated by field conditions.



This proposal assumes that no soil contamination exists within the proposed test area. Handling and disposal of contaminated soil or water is not included in this proposal. The boreholes will be backfilled with cuttings from the drilling operation upon completion and the top 12 inches replaced with asphalt cold mix.

### **Laboratory Analysis**

Upon receipt of the samples in the laboratory, they will be checked by the Project Engineer and laboratory tests assigned. The following laboratory tests are proposed:

- Sieve Analysis
- Plasticity Index
- Consolidation/Swell
- In-Situ Density
- Standard Proctor

All tests will be performed in accordance with current ASTM standards. Unused material will be stored for sixty (30) days after completion of the report and then discarded.

### **Geotechnical Report**

The final report will include the foundation and materials recommendations, edited copies of the borehole logs, a vicinity map, a borehole location map and all laboratory test reports. Four (4) copies of the report will be submitted for your use in addition to an electronic copy in PDF format.

### **Schedule**

As soon as ATL receives a signed contract and written authorization to proceed, the borehole locations will be identified in the field and Blue Stake notified to clear the locations for utilities. Typically, field work can begin after 3 days of Blue Stake notification. The subsequent proposed work schedule, after receiving Blue Stake clearance, is as follows:

Mob/DeMob & Drilling	1 day
Laboratory Analysis	10 days
Report	<u>5 days</u>
<b>TOTAL WORKING DAYS</b>	<b>16</b>

### **Invoicing**

One invoice will be generated for the project and should be paid within 30 days of receipt.



### Cost

Based on the above scope of work, the estimated cost to provide the geotechnical investigation is:

**\$3,600.00**

If the scope of work is modified, or unforeseen conditions arise, the above estimated cost will be adjusted accordingly. No increase will be requested without prior approval. ATL has assumed that overtime, weekend or holiday work will NOT be required in order to complete the work and that the excavation may be completed between the hours of 6 a.m. and 6 p.m.

### Limitation of Liability

ATL agrees, in connection with services performed under this Agreement, that such services are performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same or similar locality.

Any testing and analysis associated with the work will be performed by ATL solely to fulfill the purpose of this Agreement. ATL is not responsible for interpretations made by others of the information developed.

The client agrees to indemnify and hold ATL harmless from any and all performance of work during construction of this project, excepting liability arising directly and totally from negligence of ATL or its authorized representatives.

ATL appreciates the opportunity to submit this proposal to Gila County Department of Public Works. If you have questions, please do not hesitate to contact the undersigned.

Respectfully submitted:

A handwritten signature in black ink, appearing to read "F. C. Rivera", with a large, stylized loop at the end.

Frank C. Rivera  
CEO

DPH:FCR/lw

cc: David P Hayes, P.E.  
P. Chongo, P.E.



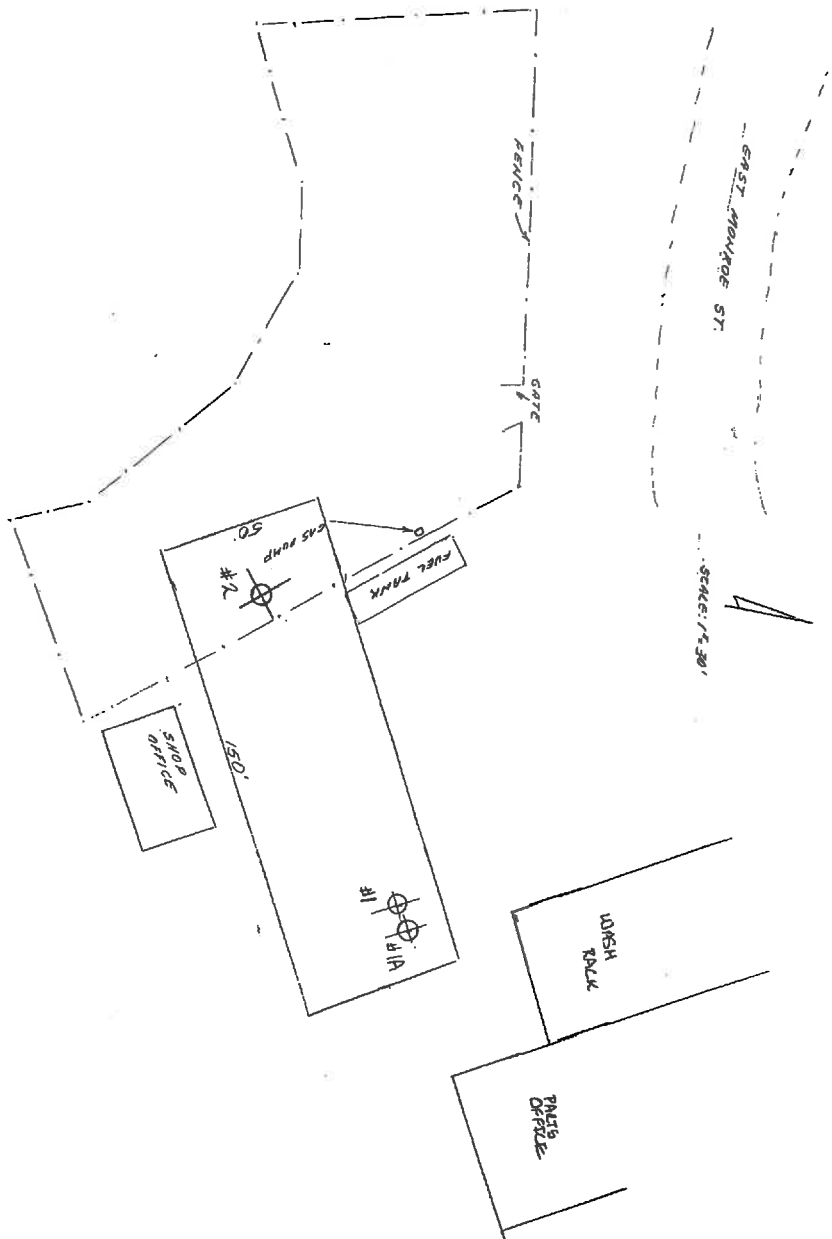
AUTHORIZED FOR: GILA COUNTY DEPARTMENT OF PUBLIC WORKS

AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_



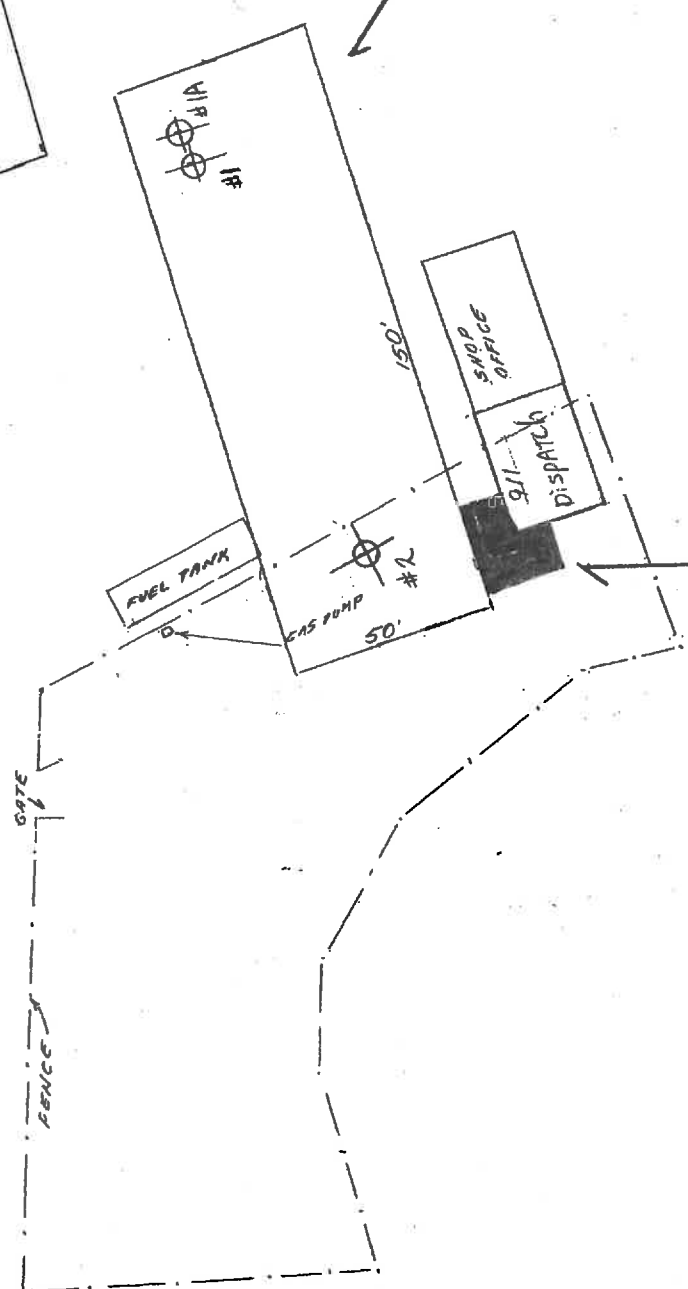
SILVA EQUITY  
 MAP OF PARKING LOT  
 SOUTH OF GUSKERO BUILDING  
 SCALE: 1/2"=30'  
 APRIL 01, 2010

EAST MONROE ST.

SCALE: 1" = 30'

WASH TRUCK

PAINTS OFFICE



This Building is proposed  
for Future Construction  
But Does Not Currently  
Exist.

Revised Site Plan  
A32045 SHSGP 888303-01  
Gila Co. Comm. Tower  
Proposed Footprint for  
Tower Construction

GILA COUNTY  
MAP OF PARKING LOT  
SOUTH OF GUERRERO BUILDING  
SCALE: 1" = 30'  
APRIL 01, 2010

SIGN IN SHEET  
MANDATORY PRE-BID WALK THROUGH MEETING

Date: March 2, 201210:00 AMTitle: S.O. Tower Installation & Radio Equipment RelocationRFP No.: 103111-1Location: S.O. Jail - Globe

Company Name	Representative Name (print)	E-Mail Address	Phone No.
CANYON STATE WIRELESS	Bill Howes	Shoewes@CanyonStateWireless.com	928-425-5878
CANYON STATE WIRELESS	Gary Stapley	gstapley@canyonstatewireless.com	928-425-5878
Creative Communications	Doug Buxbaum	doug.buxbaum@creativecomm.com	602-358-4455
DCI	Brian Durham	brian@dcicom.com	480-981-8875
CMC Comm	Mark Phillips	m.phillips@CMC-Com.com	623-451-5599
LVB Telecomm	Steve Pierce	SteveP@LVConstruction	662-549-7208
Gila County S.O.	Lt. Mike Johnson		
Gila County S.O.	Chief Deputy Tom Melcher		
Gila County Finance	Valerie Bejarano		



**SIGN IN SHEET**  
**MANDATORY PRE-BID WALK THROUGH MEETING**

Date: March 2, 2012 10:00 AM Title: S.O. Tower Installation & Radio Equipment Relocation

RFP No.: 103111-1 Location: S.O. Jail - Globe

Company Name	Representative Name (print)	E-Mail Address	Phone No.
TEAM communications	Mike Nelson	mnelson@team-services.com	480-225-6379
Patriot Towers	Ted McKenize	tmckenize@patriot-towers.com	480-776-4566
Chattanooga Council	Bob Went	Bob@chattanooga.com	606-353-5560
Clear Blue Services	Keith Wager	KeithWager@ClearBlueServices.com	520-483-6922



### **ADDENDUM #3**

**Gila County Bid No. 103111-2**

#### **S.O. Tower Installation & Radio Equipment Relocation**

*The following amendments are hereby incorporated into the bid documents for the above stated project:*

---

March 13, 2012

#### **Attachments**

- Functional Block Diagram – Console/Radio Interface
- Dispatch Site – RF Emitters
- Highway Patrol Frequencies

#### **Question / Answer**

1. Is the R56 Grounding Standard Required as the standard that will be accepted for all phases of the project (tower, equipment room, etc)?

Yes

2. Will an Entry Boot be required for entrance of cabling into the equipment room at dispatch?

Yes, as needed for proper cable access.

3. Will the County provide any electrical work that may be required to power the equipment?

Yes

4. Will the County provide the appropriate UPS for the project?

Yes

5. According to the RFP it states on page 3, item 5, "bidders must have a valid Arizona contractor's license". Is it permissible for only the subcontractor that installs the tower and cabling to be licensed or does the main contractor need to have a license as well?

The prime contractor must have a valid contractor's license to be responsible charge of the project.

6. How much over build do you want for future expansion and growth on the tower, 50%?

None

7. Under the tower can the ground be left exposed soils after construction?

No, must be covered to minimize site hazard exposure, after inspection.

8. Please provide a list of all frequencies to be included in the project in both the VHF and UHF systems. We need the information to design the proper combining and multicoupler systems. We also need these frequencies so we can do an intermodulation study to make sure that we do not cause harmful interference.

See attachments.

9. Dose the Tower Steel need to be new or can it be a used Tower?

The tower may be used assuming it meets the technical standards relating to wind loading and antenna structures.

10. Is the Tower to be of a lattice construction?

Yes, similar to Rohn © SSV.

11. Once old antennas are pulled from roof what will need to be done with the exposed holes? Will they need to be sealed?

Yes, sealed.

12. What is the orange cable running off the roof and will it stay or go?

The orange cable is the fiber optic cable. It will stay.

13. There are 4 yagi antennas on roof but RFP only mentions 3 FCC licenses. What is the 4<sup>th</sup>?

Cellular telephone repeater.

14. Will the county accept an alternate bid for overbuild?

No

15. Will the plans need to be stamped by an Engineer?

Yes. However, if foundation structure agrees with tower manufacturer specifications it may be assumed to meet their criteria.

16. Would it be ok to use a control station combiner like the one at Florence PD to get all the VHF control stations onto one antenna set?

Many of the existing radios are already set up for separate antenna connections for transmit and receive functions however, a control station combiner may be used for those stations not so implemented i.e. Tait and others. We do not understand the Florence PD site implementation.

17. AIRS 3 is listed as UHF. AIRS3 can be UHF, or 800 or VHF. Is it really the UHF version they have a radio for? If so, that would need a separate antenna.

It is a UHF station that requires a separate UHF directional antenna.

18. Can we get a schematic of the radio assets and how they are all controlled today, so we can see how they would have to be set-up at the new place?

See attachment.

19. Do we need to include an R56 grounding audit and grounding package in the bid proposal? (We'll install an R56 spec. grounding package for the tower, antennas, transmission line, waveguide bridge, ports and buss bars. Will also ground the equipment relocated and or install to new grounding package. If we install an R56 grounding package inside the equipment room, we will need to conduct an R56 audit to determine the scope of work. The R56 grounding inside the equipment room will require a ground halo with all of the conduits, metal boxes, ladder racks, etc..., to be tied to the halo and single point ground buss bar.)

Yes, it is intended to ground all the radio equipment per R 56.

20. Will Gila County be providing air conditioning and power to the equipment rack location?

Yes, already in place.

21. Will Dispatch equipment move be performed during normal working hours (8:00-5:00, Monday-Friday), excluding holidays?

Yes, highly recommended.

22. Will FCC licensing modifications, if needed, be completed by the Gila County?

Yes, already in place.

23. Does the County have zoning approval for the site? If not where is property located, city of Globe or County? What is the zoning? (ex. C-2)

Yes, located in County.

24. Has zoning approved the removal of the parking spaces?

Yes

25. Are there any easements on the property?

Yes, utility.

26. What type of access does the power company need to the power pole?

An easement of 20 feet for trucks to sit side-by-side.

27. If the site does not get zoning approval, will the contractor be paid for the work they have completed?

Zoning approved.

28. Does the tower location meet the required setbacks from the building, road, and/or the slope?

Yes, per contractor suggestion.

29. Does the County meet the zoning code for separation of towers? There was another tower by the storage container.

Yes

30. The height and poles of the ice bridge from the tower to the building will block any vehicles from going beyond the ice bridge. Does the county need to get a vehicle beyond the ice bridge?

No, we understand the tower will be located immediately adjacent to the existing building (North side near the West end.)

31. Will the cars and personal that use the parking lot be able to use a different area to park and access the building during construction?

Yes

32. Do we need to put a fence around the construction site?

A fence is not necessary. A temporary hazard warning should be put in-place during construction.

33. Do we need to provide a permanent fence or bollard to protect the tower and ice bridge?

Yes, bollards are required to minimize potential vehicular intervention.

34. Does the county want a ground wire from the building ground to the tower ground ring?

Yes

35. Is there an underground fuel line for the generator?

No, diesel system.

36. Can the antennas be above the top of the tower?

Yes, we assume at least one will be placed atop the tower. Most likely the receive antenna.

37. What is the center line of the antennas?

Center line to be determined by antenna configuration per contractor.

38. What are the azimuths of the antennas?

VHF – Southwest – Pinal  
North – Mt. Ord  
North Northeast – Aztec  
UHF – North – Mt. Ord

39. How many RF ports to do you want going into the building?

As defined by contractor to meet needs of channel assignment.  
See attachment.

40. Should the contractor use cold or hot mix asphalt to patch the parking lot?

Cold mix

41. Is the contractor moving all the wires/cables from the antennas to the equipment racks at the old building?

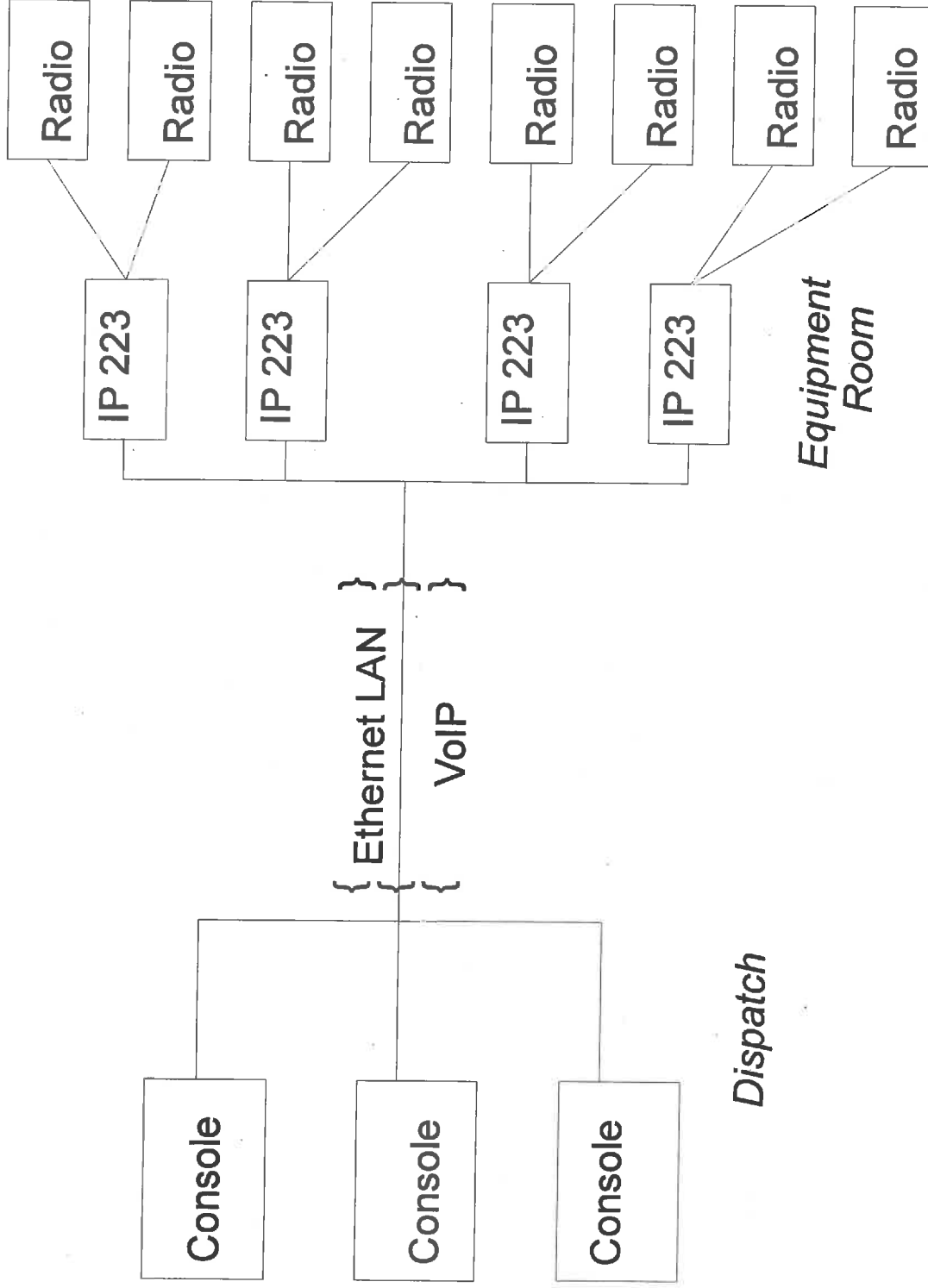
Yes

42. Some of the antennas on the old building did not have cables going to them. Are they to be used again?

No

43. Would the county consider breaking the project into 3 pay points? 1. Zoning & Construction Drawings/Permitting 2. Construction of tower per drawings 3. Transfer of radios and antennas.

Yes (50%, 30%, 20% can be considered)



Functional Block Diagram – Console/Radio Interface

J. Wortham 3/9/12  
No Scale



TX RX List

March 9,2012

Gila County Globe Dispatch Site – R F Emitters

<u>Transmit Frequency</u>	<u>R F Power Watts</u>	<u>Receive Frequency</u>
150.8050	30	155.7150
150.8050	30	154.3550
151.2575	30	155.1375
153.9050	30	155.0250
153.9800	30	155.9400
153.9950	30	155.1000
154.4450	30	154.4450
154.7700	30	155.3100
155.3100	30	154.7700
155.7400	30	155.7400
158.9775	30	155.6475
158.9850	30	154.2350
159.0075	30	155.5350
159.0300	30	155.3700
465.3750	30	460.3750
465.4750	30	460.4750

Sheet1\_2

## Highway Patrol Districts

<u>Frequency</u>	<u>License</u>	<u>Type</u>	<u>Tone</u>	<u>Alpha Tag</u>	<u>Description</u>	<u>Mode</u>	<u>Tag</u>
460.47500	KJ425	RM	100.0 PL	DPS DIST 01	Dist 01 – Kingman	FM	Law Dispatch
460.02500	KOH861	RM	100.0 PL	DPS DIST 02	Dist 02 - Flagstaff	FM	Law Dispatch
460.30000	KDF539	RM	100.0 PL	DPS DIST 03	Dist 03 - Holbrook	FM	Law Dispatch
460.40000	KOH291	RM	100.0 PL	DPS DIST 04	Dist 04 – Yuma	FM	Law Dispatch
460.32500	KOE909	RM	100.0 PL	DPS CHARLIE	Metro Phoenix – Central	FM	Law Dispatch
460.20000	KOE297	RM	100.0 PL	DPS EDWARD	Metro Phoenix – East	FM	Law Dispatch
460.30000	KOE909	RM	151.4 PL	DPS WILLIAM	Metro Phoenix – West	FM	Law Dispatch
460.02500	WPMG974	RM	151.4 PL	DPS DIST 06	Dist 06 - Casa Grande	FM	Law Dispatch
460.42500	KOF346	RM	151.4 PL	DPS DIST 08	Dist 08 – Tucson	FM	Law Dispatch
460.32500	WNQP940	RM	151.4 PL	DPS DIST 09	Dist 09 – Sierra Vista	FM	Law Dispatch
460.47500	KIQ333	RM	151.4 PL	DPS DIST 11	Dist 11 – Globe	FM	Law Dispatch
460.42500	KGY242	RM	100.0 PL	DPS DIST 12	Dist 12 – Prescott	FM	Law Dispatch
460.15000	KFZ872	RM	100.0 PL	DPS WestTAC	WestTAC - Phoenix Area – Info	FM	Law Tac
460.17500	WZN224	RM	100.0 PL	DPS EastTAC	EastTAC - Phoenix Area – Info	FM	Law Tac

## Other Highway Patrol (Statewide)

<u>Frequency</u>	<u>License</u>	<u>Type</u>	<u>Tone</u>	<u>Alpha Tag</u>	<u>Description</u>	<u>Mode</u>	<u>Tag</u>
460.22500	KOE297	RM	100.0 PL	DPS STATE	DPS Statewide Operations	FM	Law Tac
460.22500	KOE297	RM	151.4 PL	DPS ST TAC	DPS Statewide Tactical Operations	FM	Law Tac
460.27500	KOE297	RM	100.0 PL	DPS CID 1	DPS CID Ch 1 Statewide	FM	Law Tac
460.50000	KOE297	RM	100.0 PL	DPS CID 2	DPS CID Ch 2 Statewide	FM	Law Tac
460.27500	KOE297	RM	151.4 PL	DPS CID 3	DPS CID Ch 3 Statewide	FM	Law Tac
460.50000	KOE297	RM	151.4 PL	DPS CID 4	DPS CID Ch 4 Statewide	FM	Law Tac
460.52500		RM	127.3 PL	DPS CID 5	DPS CID Ch 5 Pinal County	FM	Law Tac
463.10000		RM	136.5 PL	DPS EMSCOM	DPS EMSCOM "Ranger Helos"	FM	EMS

NOTE: These are receive frequencies, the transmit frequencies are + 5 MHz (460.375 RX / 465.375 MHz TX)



## **ADDENDUM #4**

Gila County Bid No. 103111-2

### **S.O. Tower Installation & Radio Equipment Relocation**

*The following amendments are hereby incorporated into the bid documents for the above stated project:*

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March 14, 2012

#### **Attachments**

- GCSO Globe Radio Equipment -Updated

#### **Clarification to Questions 1, 4, 7, 17, and 19 on Addendum #3**

1. Is the R56 Grounding Standard Required as the standard that will be accepted for all phases of the project (tower, equipment room, etc)?

Yes

The primary grounding issues related to R 56 grounding for the tower, associated antenna structures and associated radio equipment (refer to #19)

4. Will the County provide the appropriate UPS for the project?

Yes

The UPS is already in place

7. Under the tower can the ground be left exposed soils after construction?

No, must be covered to minimize site hazard exposure, after inspection.

We assume the term ground in this context relates to the earth beneath the tower structure.

17. AIRS 3 is listed as UHF. AIRS3 can be UHF, or 800 or VHF. Is it really the UHF version they have a radio for? If so, that would need a separate antenna.

It is a UHF station that requires a separate UHF directional antenna.

- 19 Do we need to include an R56 grounding audit and grounding package in the bid proposal? (We'll install an R56 spec. grounding package for the tower, antennas, transmission line, waveguide bridge, ports and buss bars. Will also ground the equipment relocated and or install to new grounding package. If we install an R56 grounding package inside the equipment room, we will need to conduct an R56 audit to

determine the scope of work. The R56 grounding inside the equipment room will require a ground halo with all of the conduits, metal boxes, ladder racks, etc..., to be tied to the halo and single point ground buss bar.)

**Yes, it is intended to ground all the radio equipment per R 56.**

It is intended to ground all the radio equipment to the external antenna structure. A halo ground system will not be required for the overall equipment room.

# Equipment List

Wednesday, March 14, 2012

## GCSO Globe Radio Equipment – Updated

<u>Equipment</u>	<u>Use</u>	<u>Site</u>	<u>TX Freq</u>	<u>RX Freq</u>
Icom Fr 3000	Pinal Peak	Pinal	154.7700	155.3100
Icom Fr 3000	Mt Ord	Ord	154.7700	155.3100
Vertex	Ord 3	Ord	153.9800	155.9400
Tait TM-8200	Charlie 1	Aztec	159.0300	155.3700
Icom Fr 4000	I A R S	UHF	465.3750	460.3750
Motorola XPR-4550	TriCity Fire		158.9850	154.2350
Tait TM-8200	Charlie 2	Site Select	158.9775	155.6475
Tait TM-8200	Charlie 3	Site Select	151.2575	155.1375
Motorola CDM 1250	Canyon Fire		150.8050	154.3550
Motorola CDM 1250	Globe PD		153.9050	155.0250

Motorola MTR 2000	Standby Repeater	As Needed	As needed	Per JW
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